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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/519,448

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Koji Kawaguchi

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2403

23995

7590

10/19/2009

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EXAMINER

CLARK, GREGORY D

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

10/19/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/519,448	Applicant(s) KAWAGUCHI ET AL.	
	Examiner GREGORY CLARK	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-16 is/are pending in the application.
- 4a) Of the above claim(s) 5-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The examiner acknowledges the receipt of the applicants' arguments/ remarked dated 07/07/2009. Claims 5-8 cancelled, claims 9-12 amended, and claims 13-16 new.

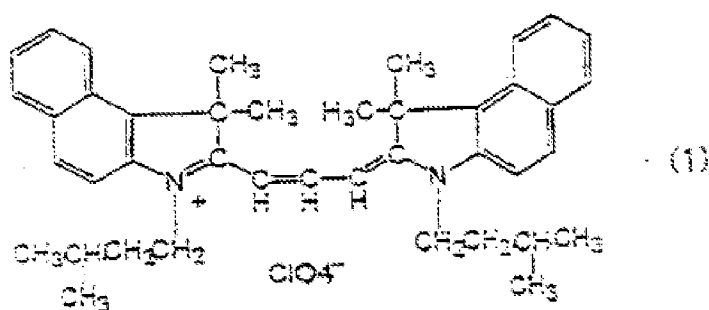
Rejections and objections made in previous office action that do not appear below have been overcome by applicant's amendments and therefore the arguments pertaining to these rejections/objections will not be addressed.

Claim Rejections - 35 USC § 103

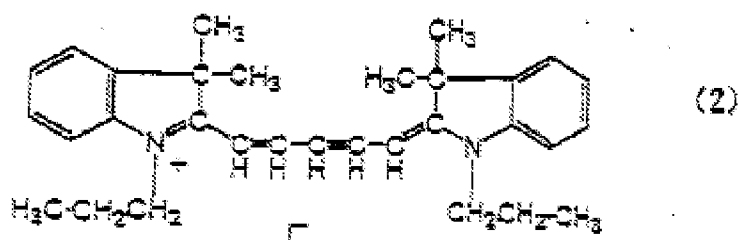
1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (GB2349388) in view of Namba (5,506,357).**
3. **Regarding Claims 9 and 13**, Kobayashi discloses a blue color filter containing a first colorant represented by the following structural formula (1) with a ClO_4^- anion (page 5).

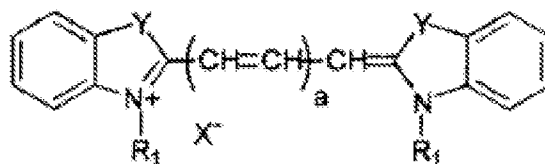


A photosensitive resin (binder resin) (page 7, paragraph 1) and a second colorant represented by the following structural formula (2) (page 6).



Kobayashi also indicates that when a phthalocyanine dye like formula (1) is used alone large deviations from the desired hue can be caused (page 4) and a color mixture of different dyes is selected to suppress undesirable light transmission to improve the color purity (page 5).

The second colorant claimed by the applicant (shown below, structure 3) differs from the second colorant disclosed by Kobayashi (shown above, structure 2) in that the applicant claims the Y position is substituted with sulfur or oxygen and Kobayashi discloses only alkyl substitution in the Y position.

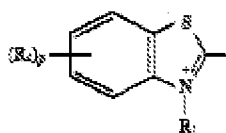


(3)

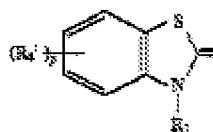
Namba discloses cyanine dyes with various substitutions in the Y position.

Namba discloses that cyanine dyes are used in applications that include: silver halide photographs, dye lasers, optical recording media, and electrophotographic sensitizers (Column 1, lines 24-27).

Representative cyanine dyes are shown below:



(4)



(5)

Structures 4 and 5 shown above represent cyanine dyes with a sulfur atom substituted at the Y position as claimed by the applicant. While one may argue that Namba is from a different field of endeavor because the use of the dye is different. The examiner would disagree, because of the way a chemist works. One working in the art looks at the material that they are working with in this case Kobayashi, and then looks through the art as a whole looking for analogous dye structures (using a structure search) to see what related structures have been made. Namba clearly demonstrates that cyanine dyes with a sulfur atom in the Y position was known in the art at the time of the invention.

With a reasonable expectation of success, a person of ordinary skill in the art could readily replace the cyanine dye claimed Kobayashi with the cyanine dye disclosed by Namba since both are cyanine dyes and one would expect that they would behave in a similar fashion or to have constructed the dye taught by Kobayashi with a sulfur in the number 3 position on the ring instead of a carbon as taught by Namba since analogous dye structures have that type of substitution.

These merely involves the substitution of one cyanine dye for another. Namba shows that dyes of the claimed type were known at the time the invention was made.

Thus, evidence of similar properties or evidence of any useful properties disclosed in the prior art that would be expected to be shared by the claimed invention weighs in favor of a conclusion that the claimed invention would have been obvious. Dillon, 919 F.2d at 697-98, 16 USPQ2d at 1905; In re Wilder, 563 F.2d 457, 461, 195 USPQ 426, 430 (CCPA 1977); In re Linter, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

Kobayashi does not mention the anions used for the second colorant. Namba discloses that generally cyanine dyes are coupled with anions such as, ClO_4^- (column 4, lines 7-8) which is included in the list of anions listed by the applicant.

4. **Regarding Claims 10, 12, 14 and 16**, Kobayashi teaches an electroluminescent device (organic EL device) containing an organic light emitting layer (page 14) and a blue color filter (page 6). Kobayashi teaches that the layers are formed by a lamination process (page 14 and 15).

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5. **Regarding Claims 11 and 15**, Kobayashi and Kamba does not mention the role of the disclosed counter ions as claimed by the applicant shown below:

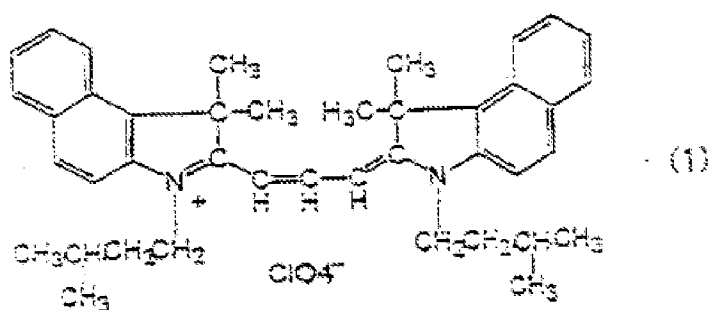
- a quencher anion that fluorescence from the first colorant or the second colorant

The examiner takes the position that it is common in the art to introduce counter ions (anions) into the cationic device dye structures such that local charge neutrality (cationic dye + anion = neutral ionic dye) is preserved and the subsequent electroluminescence results in higher color purity by preventing interaction between the electroluminescence light and the cationic dye as the light passes through the color filter. The anions disclosed by Kobayashi would therefore function as quenching anions and read on the instant claim.

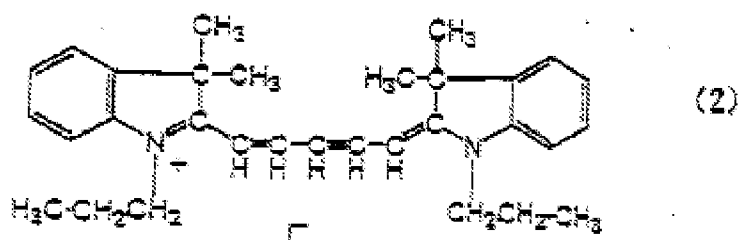
6. **Claims 9, 11, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (GB2349388) in view of Tang (US 4, 769,292).**

7. **Regarding Claims 9 and 13**, Kobayashi discloses a blue color filter containing a first colorant represented by the following structural formula (1) with a ClO_4^- anion (page 5).

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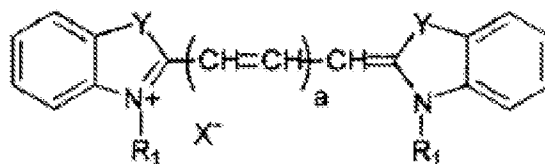


A photosensitive resin (binder resin) (page 7, paragraph 1) and a second colorant represented by the following structural formula (2) (page 6).



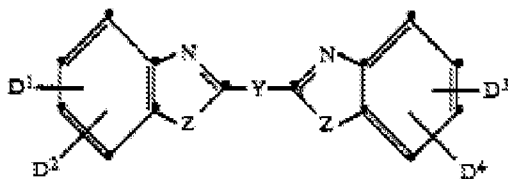
Kobayashi also indicates that when a phthalocyanine dye like formula (1) is used alone large deviations from the desired hue can be caused (page 4) and a color mixture of different dyes is selected to suppress undesirable light transmission to improve the color purity (page 5).

The second colorant claimed by the applicant (shown below, structure 3) differs from the second colorant disclosed by Kobayashi (shown above, structure 2) in that the applicant claims the Y position is substituted with sulfur or oxygen and Kobayashi discloses only alkyl substitution in the Y position.



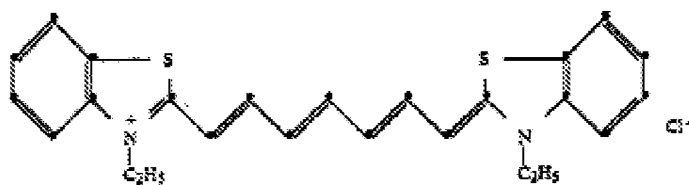
(3)

Tang discloses an electroluminescent device that contains a fluorescent material (abstract). The fluorescent materials include fluorescent dyes and cyanines are presented as an example (column 13, lines 35-37). Tang discloses that the cyanines dyes are represented by the compound of generic formula 6:



Formula 6

Tang also discloses a specific cyanines dye where Z = S and the ammonium salts has a ClO₄⁻ counter ion in formula 7:



Formula 7

Tang clearly teaches cyanine dyes that read directly on the applicants' formula 3 were known at the time of the invention and used in electroluminescent devices.

It would have been obvious to a person of ordinary skill at the time of the invention to have selected from known cyanine dyes used in electroluminescent devices

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which would have included those taught by Tang which read on the applicants' formula 3.

8. **Regarding Claims 11 and 15**, Kobayashi and Tang does not mention the role of the disclosed counter ions as claimed by the applicant shown below:

- a quencher anion that fluorescence from the first colorant or the second colorant

The examiner takes the position that both Kobayashi and Tang disclose some representative anions that are claimed by the applicant such as ClO_4^- for Formula 1 and Cl^- for formula 7. The anions disclosed by Kobayashi and Tang would therefore function in the same capacity as a quencher anion for fluorescence from the first colorant or the second colorant.

Response to Arguments

The applicant argues that the cyanine dyes of Nambe are not mere substitutes for the cyanine dyes claimed by the applicant since they are used in a different field of endeavor. Additionally, the applicant argues that the Y position of formula 2 of Kobayashi would show steric hindrance and have different properties.

The examiner counters that a skilled chemist working in the art would look at the material that they are working with in this case Kobayashi, and then look through the art as a whole looking for analogous dye structures (using a structure search) to see what related structures have been made. Namba clearly demonstrates that cyanine dyes with a sulfur atom in the Y position was known in the art at the time of the invention.

Based on the amended nature of the claims, the examiner applies the Tang reference that teaches the use of cyanine dye in electroluminescent devices. The dyes taught by Tang read on the applicants' dyes, shows sulfur substitution (no steric effects) and have anions that are common with those listed by the applicant.

The examiner maintains the previous position with respect to Kobayashi and Kamba and further counters with Kobayashi and Tang to show that it would have clearly been obvious to a person of ordinary skill in the electroluminescent art to select from known cyanine dyes.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY CLARK whose telephone number is (571)270-7087. The examiner can normally be reached on M-Th 7:00 AM to 5 PM Alternating Fri 7:30 AM to 4 PM and Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 1794

GREGORY CLARK/GDC/
Examiner
Art Unit 1794